

# Electromagnetic neutrino interactions in elastic neutrino-proton scattering

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We develop a basic theoretical apparatus for the search of electromagnetic neutrino interactions in experiments on elastic neutrino-nucleus scattering [1]. Using our approach developed for the case of elastic neutrino-electron collisions in [2], we take into account all electromagnetic form factors of massive neutrinos [3] in the present treatment. In this contribution we focus on elastic neutrino-proton scattering, which can be important for studying supernova neutrinos in experiments, for example, such as JUNO [4]. In our consideration we take into account all electromagnetic form factors not only of a neutrino, but of a proton as well.

[1] M. Cadeddu, C. Giunti, K. A. Kouzakov, Y. F. Li, A. I. Studenikin, and Y. Y. Zhang, Phys. Rev. D 98, 113010 (2018), arXiv:1810.05606.

[2] K. A. Kouzakov and A. I. Studenikin, Phys. Rev. D 96, 099904 (2017), arXiv:1703.00401.

[3] C. Giunti and A. Studenikin, Rev. Mod. Phys. 87, 531 (2015), arXiv:1403.6344. [4] F. An et al, J. Phys. G 43.3, 030401 (2016), arXiv:1507.05613.

## Secondary track (number)

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